The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GREGORY JONES, MALCOLM POVEY
and JOHN CAMPBELL

Appeal No. 2002-0879
Application 09/509,126

ON BRIEF

Before KRASS, JERRY SMITH, and BARRY, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-22 and 24-26. Claim 23 has been indicated to contain allowable subject matter.

The disclosed invention pertains to a method for measuring the agglomerative state of asphaltenes in oil containing asphaltenes.

Representative claim 1 is reproduced as follows:

1. A method for measuring the agglomerative state of asphaltenes in oil containing asphaltenes, comprising applying to the oil a series of pulses of acoustic energy, each pulse comprising acoustic energy at multiple frequencies, thereby scattering at least part of the energy; detecting, for each of a plurality of pulses in the series, the scattered acoustic energy to produce amplitude versus time data; resolving the amplitude versus time data to obtain a magnitude of the detected scattered acoustic energy at selected frequencies; averaging over the plurality of pulses the magnitude for each pulse at each selected frequency; and determining from the averaging the agglomerative state of the asphaltenes.

The examiner relies on the following references:

Gopinathan et al. (Gopinathan)	5,853,994	Dec. 29, 1998
Jones et al. (Jones)	5,969,237	Oct. 19, 1999

R. B. de Boer et al. (de Boer), "Screening of Crude Oils for Asphalt Precipitation: Theory, Practice, and the Selection of Inhibitors," SPE Production and Facilities, February 1995, pages 55-61.

Claims 1-14 and 16-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of de Boer in view of Gopinathan. Claims 1-11, 15-22 and 24-26 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of Jones.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 1-14 and 16-19. We are also of the view that the examiner's rejection based on double patenting is supported by this record. Accordingly, we affirm-in-part.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1,

17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d

1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered and are deemed to be waived [see 37 CFR § 1.192(a)].

With respect to independent claim 1, the examiner cites de Boer as teaching a method for measuring the agglomerative state of asphaltenes in oil using acoustic energy, but the examiner admits that de Boer does not teach a selected frequency range in which the magnitude of the scattered signal is resolved at selected frequencies. The examiner cites Gopinathan as teaching a method for measuring the agglomeration of particles in a fluid which meets the limitations of claim 1. The examiner finds that it would have been obvious to the artisan to use the method taught by Gopinathan in the de Boer system [answer, pages 3-4].

Appellants argue that de Boer differs substantially from the claimed invention and that Gopinathan does not make up for the deficiencies of de Boer. Specifically, appellants argue that the method of Gopinathan is limited to measurements of a limited number of particle classes, each of which has a narrow predetermined range of sizes within each class and significantly

different sizes between classes. Appellants argue, therefore, that the Gopinathan method could not be used to determine the agglomerative state of asphaltenes in oil as claimed. Appellants also note that Gopinathan requires that the fluid being measured be contaminated before agglomeration can be measured which could not be done on oil. Appellants also argue that Gopinathan is inapplicable to the claimed invention because Gopinathan requires that particle sizes be known in advance whereas the size of asphaltenes in oil are unknown [brief, pages 8-12].

The examiner responds that it would have been obvious to modify the method of de Boer with the method of Gopinathan because it would provide a fuller representation of the agglomerative state of the sample studied by de Boer. The examiner notes that Gopinathan teaches that in an acoustic scattering detection of agglomerated particles, a frequency range can bed detected in which the magnitude of the scattered signal is resolved at scattered frequencies. With respect to the particle size argument, the examiner asserts that the crude oil of de Boer would inherently have a continuum of particle sizes [answer, pages 5-8].

Appellants repeat many of the arguments made in the brief. Specifically, appellants argue that nothing in Gopinathan

betrays any inkling of any way to revise the de Boer method to make it more flexible, let alone to modify the de Boer method to create the particular flexible method defined by the claimed invention which does not involve discrete, pre-selected particle sizes [reply brief].

We will not sustain the rejection of independent claim 1 for essentially the reasons argued by appellants in the brief. We agree with appellants that the artisan would not have been motivated to apply the teachings of Gopinathan to the method of de Boer. The teachings of Gopinathan fundamentally require a fluid which reacts to a contamination to create the agglomeration of known particles of predetermined size. As argued by appellants, the crude oil of de Boer has agglomerative particles of unknown size and the crude oil can not be contaminated in the manner taught by Gopinathan. There would be no basis for the artisan to attempt to apply the disparate teachings of Gopinathan to the crude oil measurement in de Boer except in an improper attempt to reconstruct the claimed invention in hindsight.

Since we have not sustained the rejection of claim 1, we also do not sustain the rejection of claims 2-14 and 16-19 which depend from claim 1.

We now consider the rejection of claims 1-11, 15-22 and 24-26 under the judicially created doctrine of obviousness-type double patenting. The examiner asserts that the claims on appeal are essentially duplicates of the claims in the Jones patent except for the use of multiple pulse averaging. The examiner finds that it would have been obvious to the artisan to use the averaging of multiple signals to decrease the effect of errors in singular measurements and that such averaging is common in the testing art [answer, page 3].

Appellants note that all claims on appeal recite the averaging of the resolved magnitude versus frequency data, and that none of the claims of the patent refer to any manipulation of the magnitude versus frequency data. Appellants argue that the improvement of their claimed method does not result from the mere averaging out of errors as asserted by the examiner. Appellants also note that claim 15 on appeal recites the Fourier transform which is not even hinted at in the prior art of record. Finally, appellants assert that the Jones patent nowhere teaches or suggests that repeated pulses would do more than simply duplicate the original data, or that averaging the resolved results therefrom would improve the measurement of the agglomerative state [brief, page 13].

The examiner responds that claim 12 of the Jones patent recites the resolving of data using the Fourier transform. The examiner also notes that the reason for modifying the claims of the Jones patent was to take advantage of the well known use of averaging multiple measurements, which rationale has not been traversed or rebutted by appellants [answer, pages 5-6].

We will sustain the examiner's obviousness double patenting rejection of claims 1-11, 15-22 and 24-26. Appellants have argued this rejection as a single group except for additional arguments made with respect to claim 15. Therefore, we will consider this rejection only with respect to claims 1 and 15. With respect to claim 15, we agree with the examiner that claim 12 of the Jones patent specifically recites using the Fourier transform to generate a magnitude versus frequency format. With respect to claim 1, appellants are correct that there is no mention of averaging in the claims of the Jones patent. The examiner relies on the well known procedure, however, of averaging a plurality of measurements in order to eliminate or smooth out errors which might be associated with a single measurement. As noted above, appellants do not dispute that averaging is known to reduce errors of single measurements, but instead, appellants argue that there invention is more than

mere averaging. We find nothing in appealed claim 1 which requires that we consider anything other than the obviousness of modifying the claims of the Jones patent to broadly include averaging of multiple signals in order to reduce errors that might be associated with a single measurement. Although we are normally hesitant to sustain a rejection which relies on knowledge that is alleged to be well known to the artisan, appellants have not challenged this finding of the examiner, and we are convinced that the concept of averaging measurements is, in fact, well known in the various arts of taking measurements. Thus, we find that the examiner has established a prima facie case of double patenting which has not been persuasively rebutted by appellants.

In summary, we have not sustained the examiner's rejection of the claims under 35 U.S.C. § 103(a), but we have sustained the examiner's rejection of the claims on the ground of obviousness-type double patenting. Therefore, the decision of the examiner rejecting claims 1-22 and 24-26 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

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